

Second Quarter 2012



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DEFINITIONS

Airport Noise Zone (ANZ): The area surrounding the airport where aircraft noise levels are equal to or greater than DNL 65

Code of Maryland Regulations (COMAR): Requires the MAA to control residential and commercial development in the ANZ

Decibel (dB): A logarithmic unit of measurement of sound intensity. "A" weighted decibels have been adjusted to account for the response of the human ear to certain sound levels

Day-Night Average Sound Level (DNL): A measurement unit of 24 hours of noise (midnight to midnight) that accounts for the increased impact of night-time noises

Sound Exposure Level (SEL): A term used to describe the total sound energy from a single aircraft noise event. It takes into account both the maximum noise level (Lmax) and the duration of the event

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SUMMARY

This report provides a review of the aviation noise abatement program for the second quarter of 2012 (April 1 to June 30). Included in this report are updates on the various types of aircraft operations, noise levels at the permanent noise monitoring sites, and a summary of complaints received about aircraft noise.

Average daily jet flights were approximately 688 per day during the 2nd quarter of 2012, compared to 646 per day for the 2nd quarter of 2011, an increase of 9.4%.

- Night-time operations averaged 75 per night for the 2nd quarter of 2012, compared to 73 per night during the 2nd quarter of 2011.
- The percentage of re-certified (hush-kitted) aircraft operating at Baltimore/Washington International Thurgood Marshall Airport (BWI Marshall) was .4 percent during the 2nd quarter of 2012, compared to 1 percent during the 2nd quarter of 2011.
- There were a total of 107 calls to the Airport Noise Hotline during the 2nd quarter of 2012.
- The Airport operated in west flow for 66 percent of the time during the 2nd quarter of 2012.

Aviation News Items of Interest:

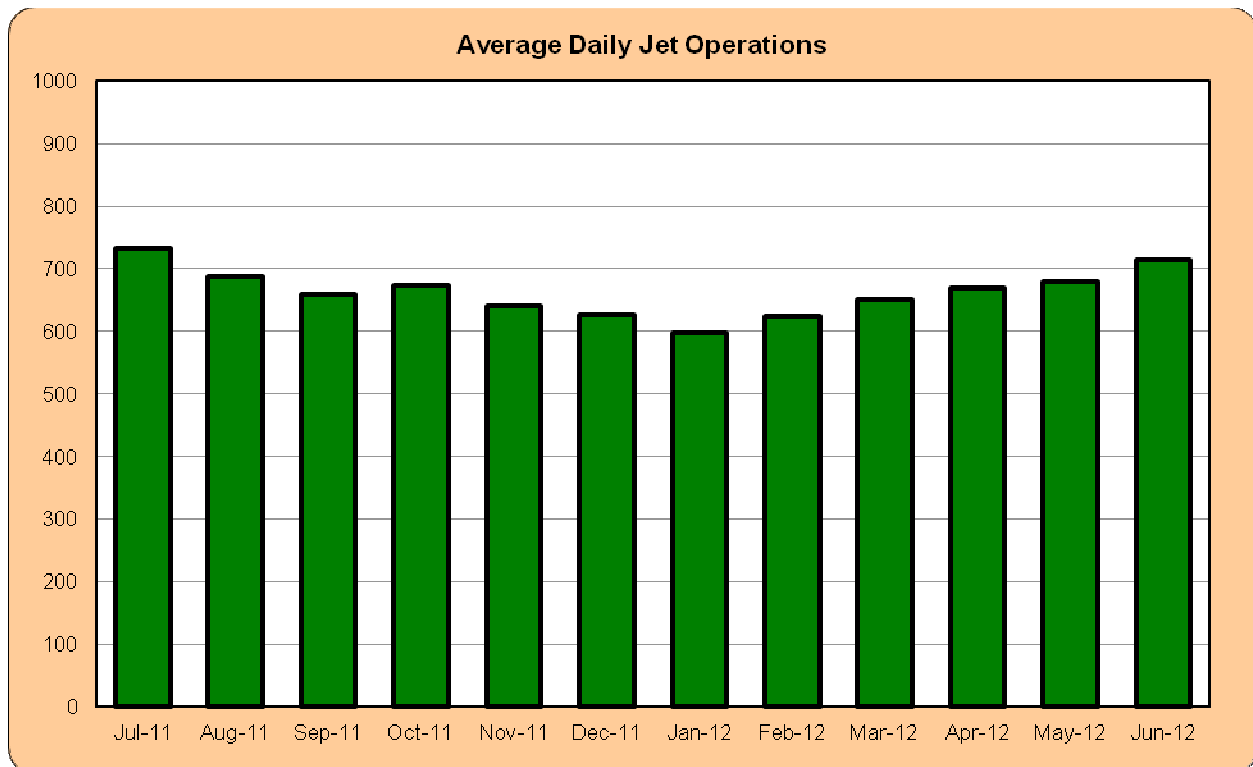
- Construction has started on a major terminal enhancement program at Baltimore/Washington International Thurgood Marshall Airport. This construction includes a new, expanded security checkpoint; a secure connector between Concourses B and C with moving sidewalks and other passenger amenities; and an improved concourse C facility with improved airline gate hold rooms and new food and retail space. Completion of the improvements is anticipated in the summer of 2013.
- Spirit Airlines plans to start non-stop service from Baltimore/Washington International Thurgood Marshall Airport to Fort Lauderdale and Dallas/Fort Worth beginning on September 6, 2012. Spirit will offer twice daily roundtrip flights between BWI Marshall and Fort Lauderdale and one daily roundtrip flight between BWI Marshall and Dallas/Fort Worth.
- BWI Marshall is now offering free wireless Internet access for travelers. A fee-based Wi-Fi service is also available for those that prefer greater-bandwidth or a commercial free session. In February, PC World magazine reported that BWI Marshall was among the best U.S. airports for tech travelers.

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AIRPORT OPERATIONS

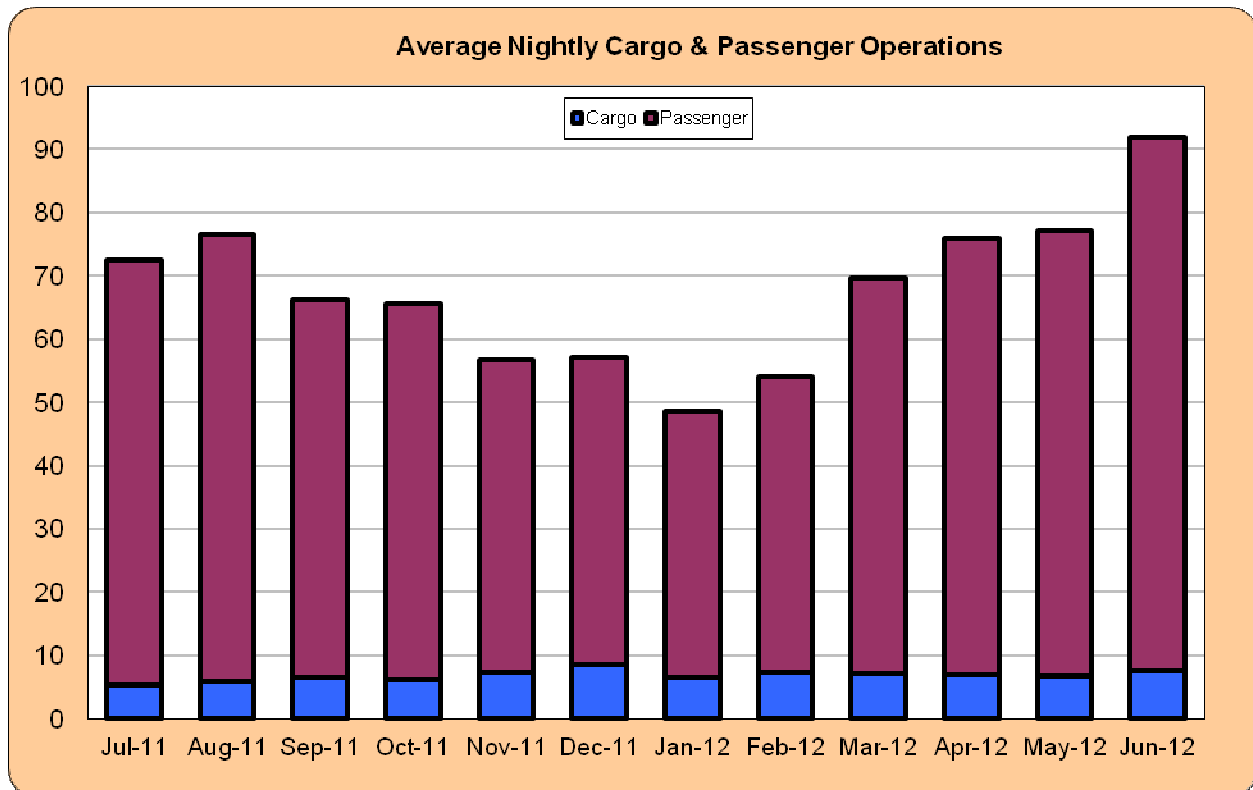
This section provides information on various types of aircraft operations at BWI Marshall, including the percentage of re-certified aircraft operating at the airport, and the percentage of aircraft operations on each runway.

The graph below shows the average number of daily jet flights for each month, including arrivals and departures by air carrier aircraft. Twenty-four hours of flights each day are averaged for each month to arrive at the results. The average daily number of jet operations during the 2nd quarter of 2012 was 688, compared to 646 for the 2nd quarter of 2011, an increase of 9.4%.



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This graph shows night-time air-carrier jet and cargo operations. A night-time operation is defined as an arrival or departure that occurs between the hours of 10 p.m. and 7 a.m. The average number of night-time jet operations was 75 per night during the 2nd quarter of 2012, compared to 73 per night for the 2nd quarter of 2011. The average number of night-time cargo operations was approximately 7 per night for the 2nd quarter of 2012, and 7 for the 2nd quarter of 2011.

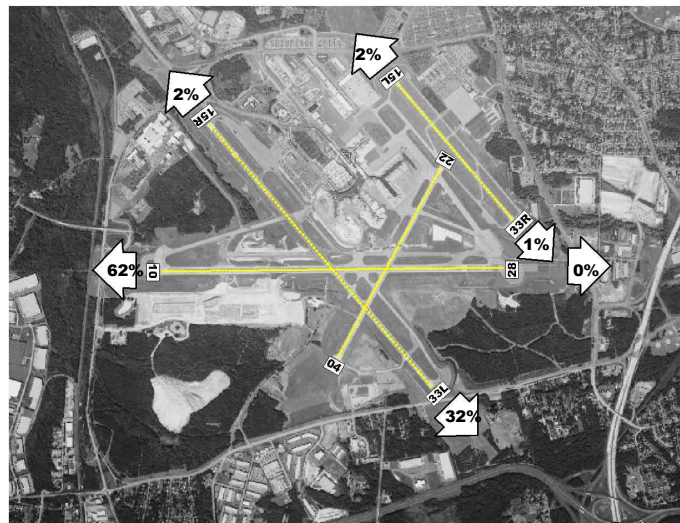


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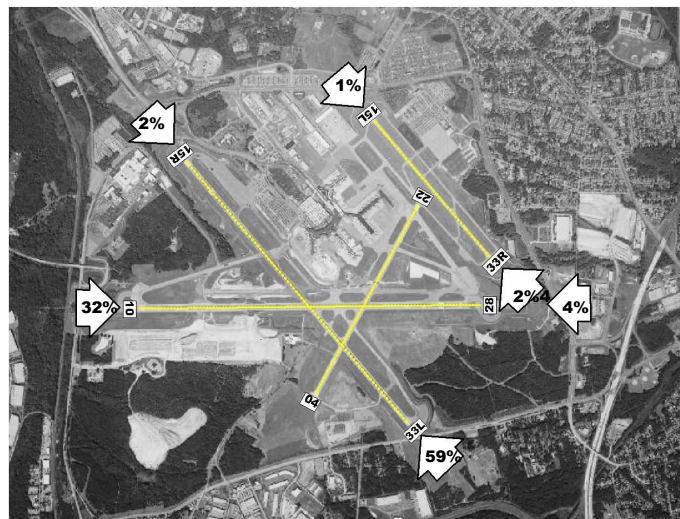
Runway Use

The MAA implemented the Preferential Runway Use System to minimize the impact of aircraft noise on neighboring communities. Aircraft departures in west flow are more desirable since a smaller population is impacted by aircraft noise than when in east flow. Wind direction, weather and operational factors determine the direction of air traffic flow. Aircraft take off and land facing into the wind for operational and safety reasons. During west flow large jet aircraft take-off primarily from Runway 28 and land on Runway 33L. During east flow large jet aircraft take-off primarily from Runway 15R and land on Runway 10. The figures below show percentages of runway use for this quarter for all jets. Historical trends for prevailing winds result in an annual average west flow of approximately 70 percent.

Jet Departures by Runway



Jet Landings by Runway



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Flight Corridors

The following three pages show flight corridors (air traffic patterns) for the following operations:

- all jet departures in west flow
- all jet departures in east flow
- all jet arrivals

The data used to create the flight corridor maps was taken from the aircraft noise and flight track monitoring system located in the Division of Noise, Real Estate and Land Use Compatibility Planning. Each map shows the average number of flights per day for each corridor, the percentages of arrivals or departures for each corridor, and the number of days with no flights. The category “all jets” includes commercial air carrier aircraft and private and corporate jets.

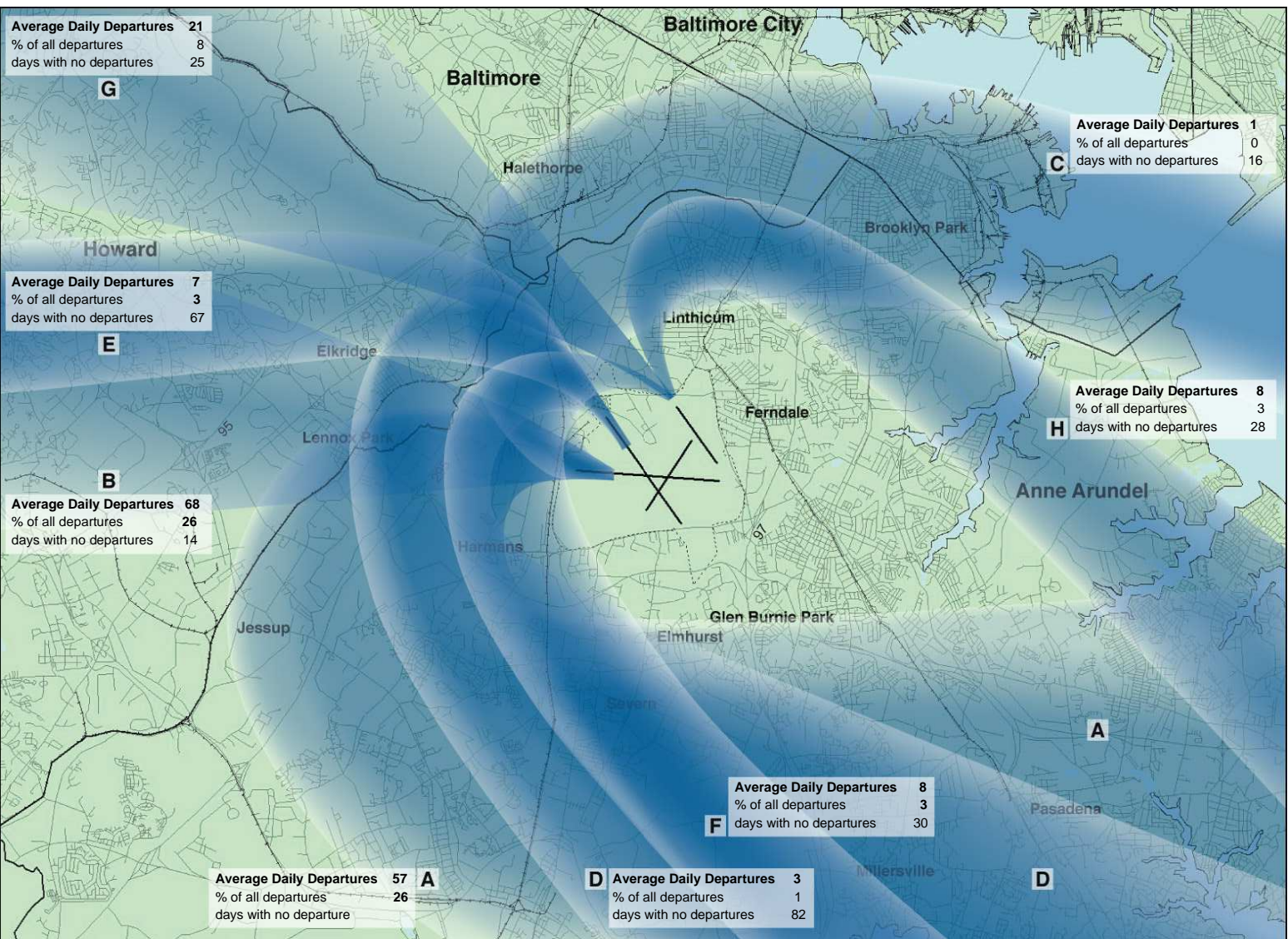
The purpose of the corridor maps is to show the actual flight patterns in use at BWI Marshall, and the average number of daily flights for each pattern for the quarter.

Jet Departures in West Flow shows that the most commonly used departure pattern in west flow was corridor B, accounting for 26 percent of all departures, averaging 68 departures per day.

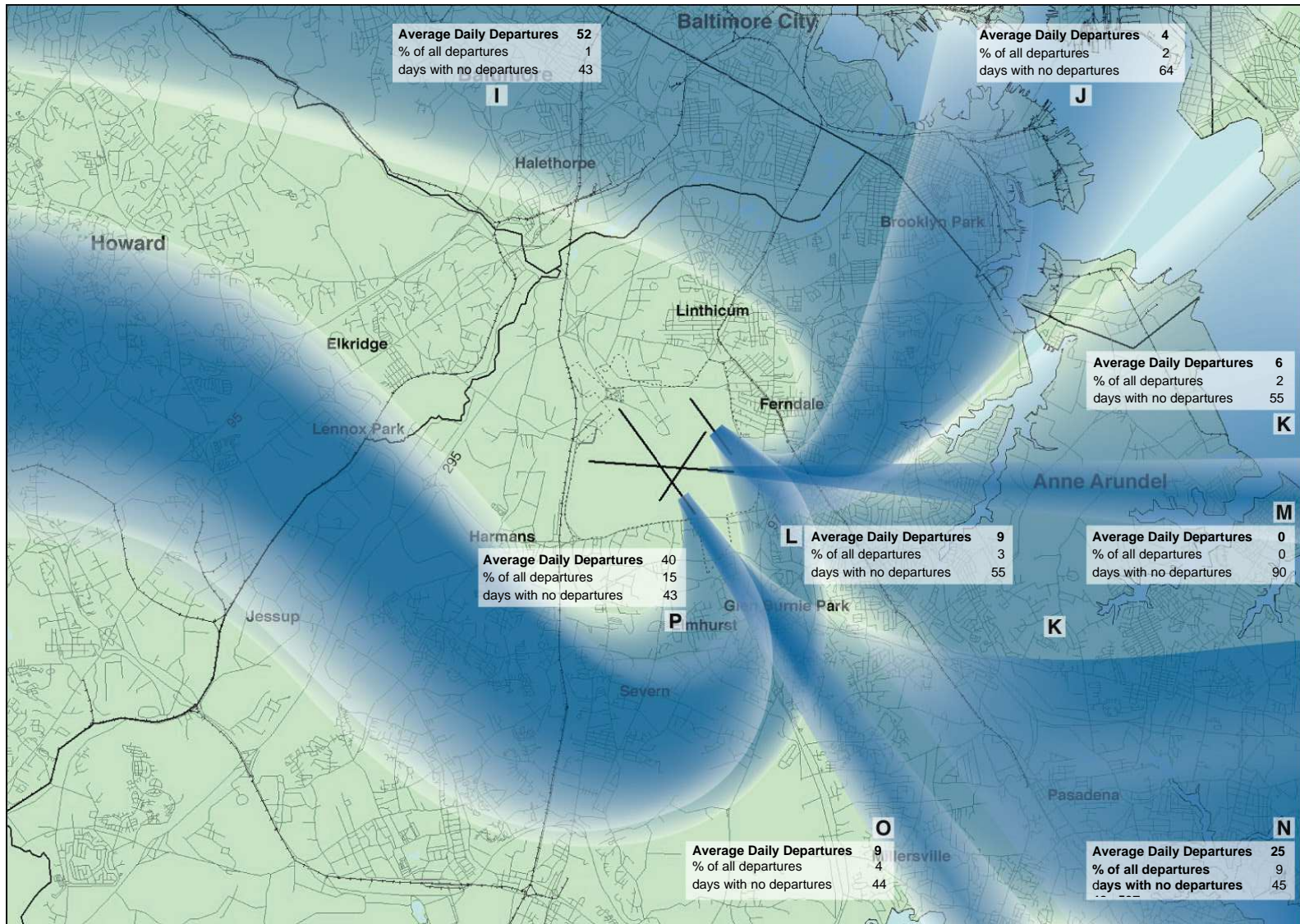
Jet Departures in East Flow shows that the most commonly used departure pattern in east flow was corridor P, accounting for 15 percent of all departures, averaging 40 departures per day.

All Jet Arrivals shows that the most commonly used arrival pattern was corridor B, accounting for 59 percent of all arrivals, averaging 184 arrivals per day.

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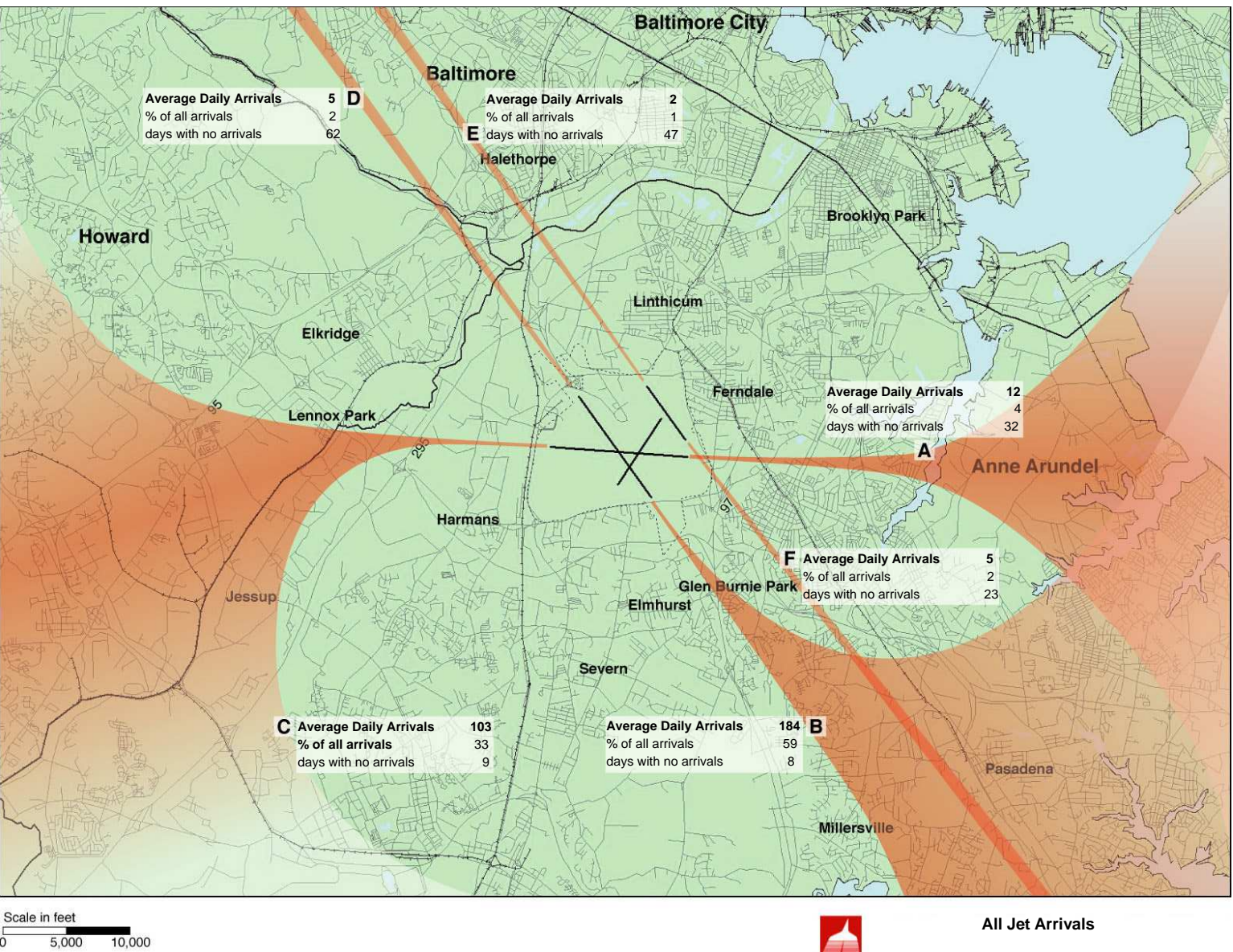


Scale in feet
0 5,000 10,000



Jet Departures in East Flow

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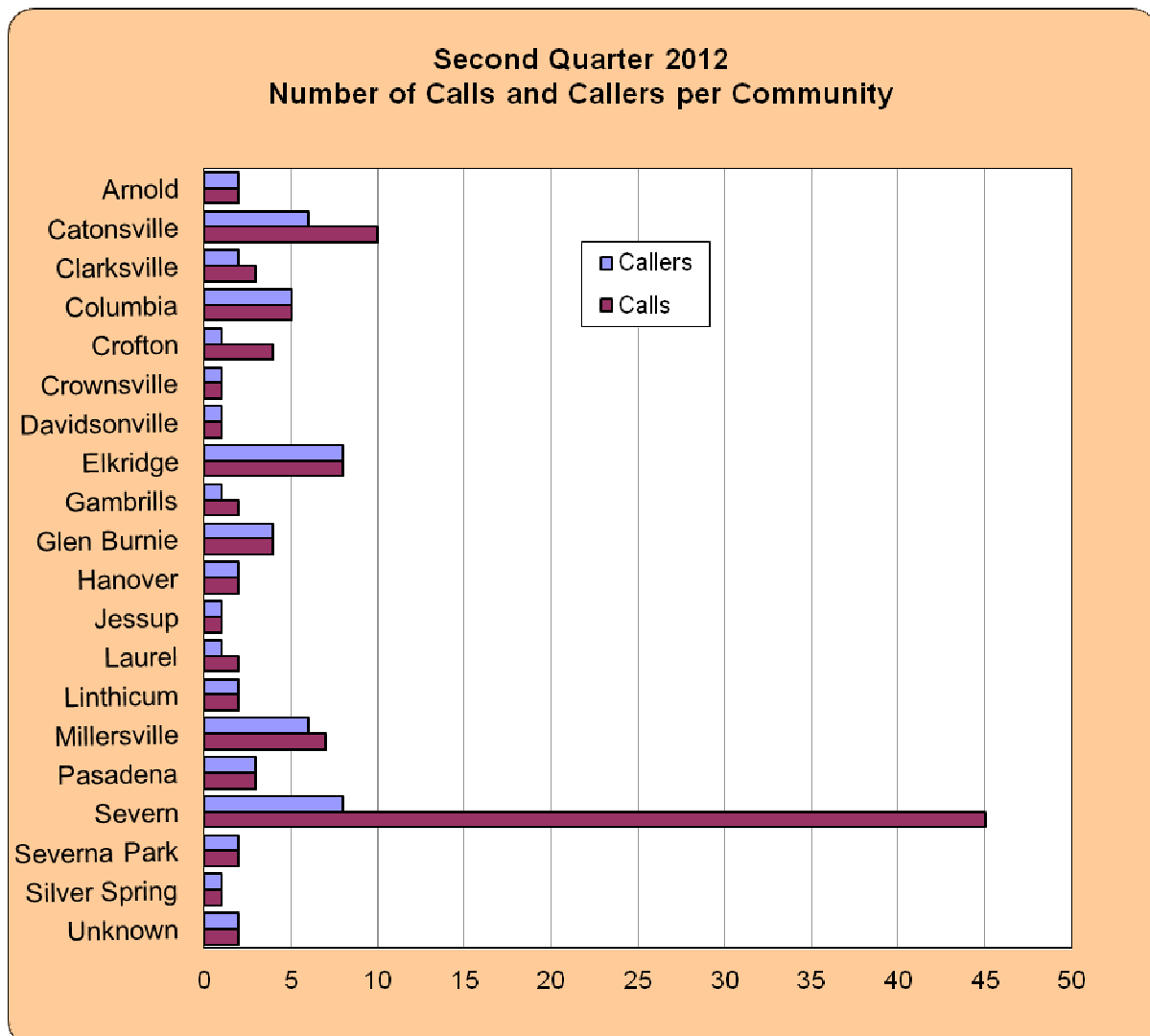


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AIRPORT NOISE HOTLINE CALLS

The MAA maintains a 24-hour Airport Noise Hotline at **410-859-7021**. Staff is available during normal business hours to discuss aircraft noise complaints directly with callers. Voicemail is available for recording noise complaints at night and on weekends. The graph below shows the number of calls/e-mails and callers per community for the quarter.

There were 107 calls (59 callers) during the 2nd quarter of 2012 compared to 81 calls (50 callers) during the 2nd quarter of 2011.



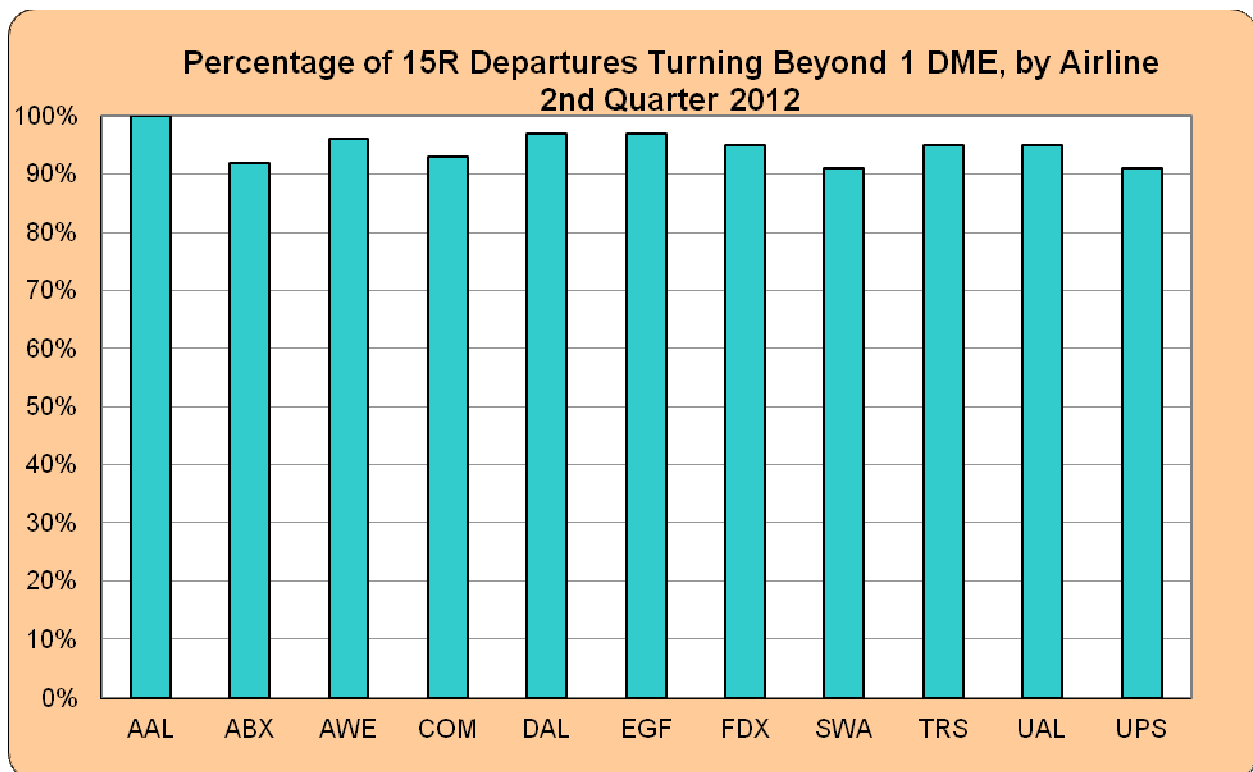
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OBSERVANCE OF NOISE ABATEMENT PROCEDURES

In order to encourage on-going compliance with the voluntary noise abatement procedures developed for BWI Marshall, a Quarterly Airline Performance Report is generated for the major carriers and cargo operators. Data is obtained from our noise and flight track monitoring system and the three noise abatement procedures of most interest to the local communities are evaluated. These procedures are:

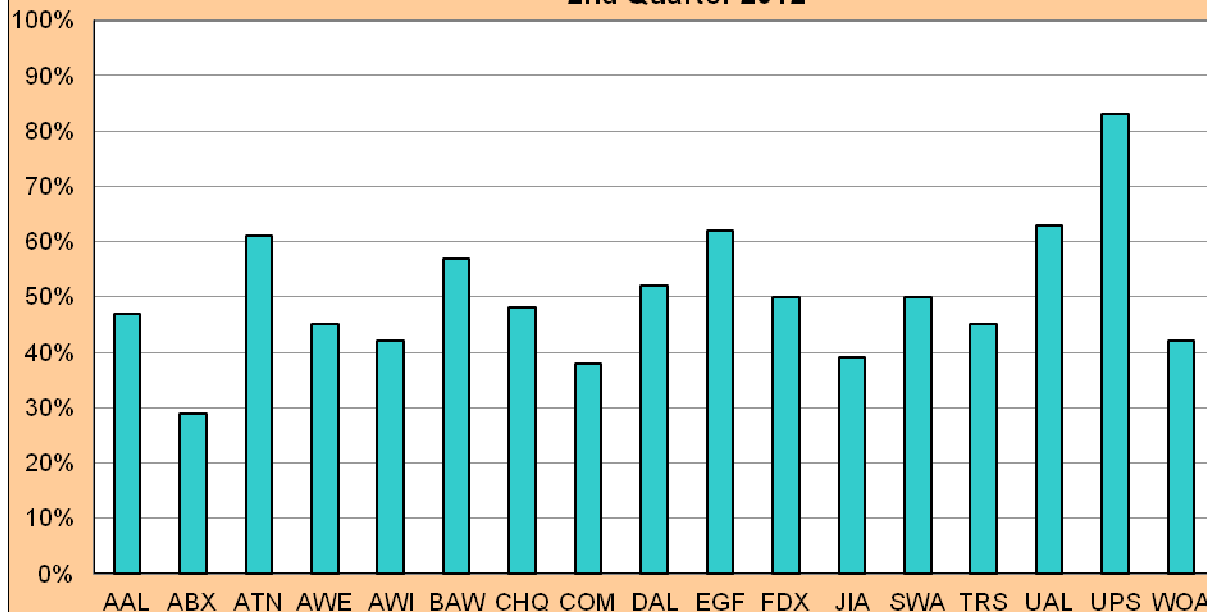
1. Runway 15 Right departures initiating their right turns at, but not prior to, 1 DME
2. Runway 33 Left Visual Approach arrivals maintaining 3,000 feet altitude or higher until reaching 10 DME from the Airport
3. Runway 28 departures initiating their turns at, but not prior to, 3 DME

The following graphs were derived from the Quarterly Airline Performance Report for the 1st quarter of 2012. They show the percentage of flights for each airline which comply with each of the three procedures. DME stands for Distance Measuring Equipment, and is measured slant-range from the navigational aid located near the center of the Airport. One DME is one nautical mile.

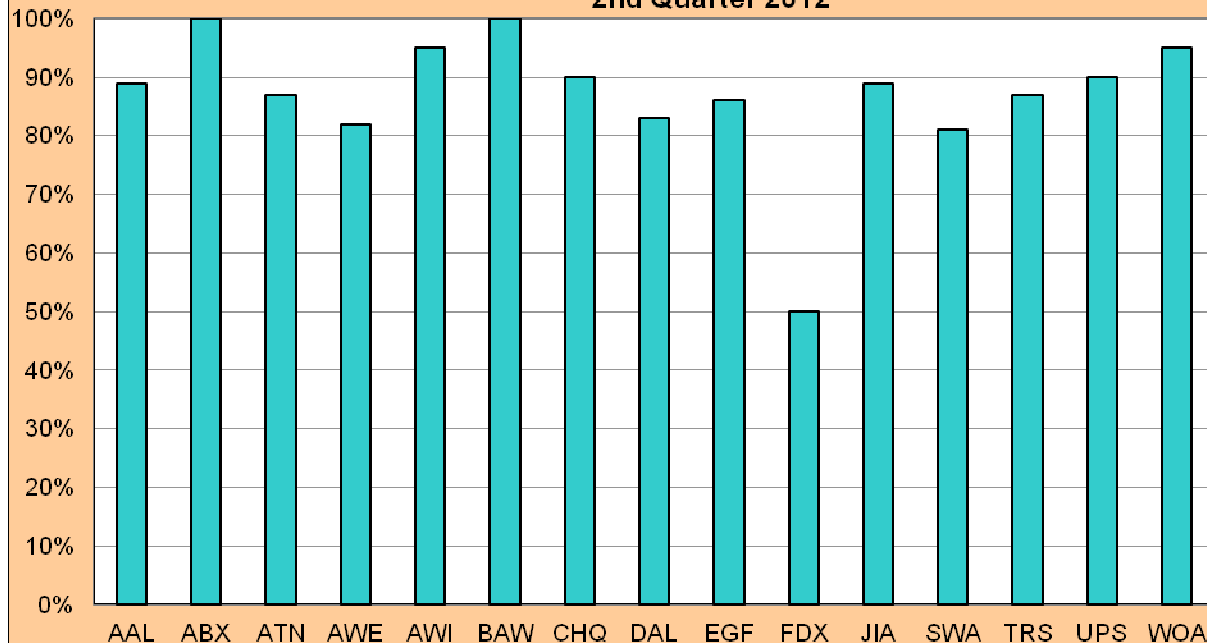


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**Percentage of 33L Arrivals Remaining Above 3,000' at 10 DME by
Airline
2nd Quarter 2012**



**Percentage of R28 Departures Turning Beyond 3 DME, by Airline
2nd Quarter 2012**



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COMMUNITY OUTREACH

The MAA engages in on-going efforts to enhance the level of communication and interaction between the Airport and area residents. The MAA Community Outreach Programs encourage the exchange of information between the MAA and local community groups and residences by providing a contact point for listening to and responding to Airport-related community concerns. These programs also supplement the efforts of the BWI Marshall Neighbors' Committee to promote the active participation of local residents in Airport issues.

The Division of Noise, Real Estate and Land Use Compatibility Planning keeps track of services provided to the local community to promote public education and communication, and of the number of responses to public concerns regarding aviation noise. Specific services or activities provided by the MAA and the Noise Abatement Office are listed below, along with the number of contacts.

Public Education Events & Activities during the 2nd Quarter of 2012

Committee Meetings	1
Community Meetings	3
Community Noise Monitoring Reports	0
Airport Zoning Permits	60
Mailings	2

COMMUNITY ENHANCEMENT GRANT PROGRAM

Maryland Senate Bill 276 established an 11-member "Citizens Committee for the Enhancement of Communities Surrounding Baltimore/Washington International Thurgood Marshall Airport." The intent of this legislation is to provide some benefit to those citizens living in communities impacted by the daily operation of BWI Marshall by allowing them the opportunity to apply for grants for transportation-related projects such as sidewalks, speed humps, street lights, etc. These communities must be located within the most recently certified Airport Noise Zone or within two miles of the outermost noise contour.

The Community Enhancement Grant Committee met on May 2, 2012. No applications were reviewed since there was no money left in the budget. The Committee will meet again in August 2012.

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NOISE MONITORING PROGRAM

The MAA operates a permanent noise monitoring system that operates 24 hours per day, seven days a week. The noise monitoring equipment in place at BWI-Marshall was installed in the late 1980's and is approaching the end of its useful life due to the age of the equipment and the inability to obtain replacement parts. The MAA is currently in the process of selecting a new system to be installed within the next 24 to 36 months. Until that time, we will continue to collect noise data and report, in table format, the finding from all equipment which is still operational. The individual noise monitor graphs will be discontinued until the new system is installed.

The map on the next page shows the locations of the noise monitors and the measured noise levels at each location. The term **DNL** (symbolized as "Ldn" in mathematical equations) means **Day-Night Average Sound Level**, and is used to report aircraft, community and total noise levels. DNL is defined as the cumulative sound energy averaged over a twenty-four hour period, with ten-decibels (dB) added to noise events which occur between the hours of 10 p.m. and 7 a.m. This penalty accounts for the greater impact of noise events which occur at night. DNL is measured from midnight to midnight.

The map on the following page shows the quarterly Aircraft (A), Community (C), and Total (T) DNL values at each site. At some sites community or environmental noise levels (street traffic and other neighborhood noises) exceed aircraft noise levels.

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Monthly Noise Measurements

Site	Aircraft Noise Levels											DNL(A)
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1 St. Augustine Church, Elkridge	45	45	47	47	47	50	--	--	--	--	--	--
2 Harwood Park	--	--	--	--	--	--	--	--	--	--	--	--
3 Lennox Ave., Dorsey	61	62	63	63	64	63	--	--	--	--	--	--
4 Hanover	--	--	--	--	--	--	--	--	--	--	--	--
6 Delmont Church, Severn	49	50	54	50	55	53	--	--	--	--	--	--
7 Wicklow Woods, Ferndale	55	57	55	56	53	53	--	--	--	--	--	--
8 Glen Burnie Heights	55	54	55	50	51	51	--	--	--	--	--	--
9 Army National Guard Armory	--	--	--	52	51	57	--	--	--	--	--	--
10 Pumping Station, Margate	--	--	--	--	--	--	--	--	--	--	--	--
11 Queenstown	--	--	--	--	--	--	--	--	--	--	--	--
12 Rippling Woods E.S.	60	60	61	62	61	62	--	--	--	--	--	--
13 Oakwood Park, Glen Burnie	--	--	--	--	--	--	--	--	--	--	--	--
14 Approach End R15R (Outer)	--	--	--	--	--	--	--	--	--	--	--	--
15 Approach End R15R (Inner)	63	66	66	64	67	67	--	--	--	--	--	--
16 Hanover	--	--	--	--	--	--	--	--	--	--	--	--
17 Timber Ridge Rd., Timber Ridge	--	--	--	--	--	--	--	--	--	--	--	--
18 Approach End RWY 15L	60	60	60	58	58	58	--	--	--	--	--	--
19 Hollins Ferry Rd., Glen Burnie	58	72	72	58	58	70	--	--	--	--	--	--
20 Friendship Park, Glen Burnie	--	--	--	--	--	--	--	--	--	--	--	--
21 Glen Burnie Park E.S.	60	60	62	62	62	62	--	--	--	--	--	--
22 Columbia	--	--	--	56	56	57	--	--	--	--	--	--
23 Quarterfield E.S., Severn	--	--	--	--	--	--	--	--	--	--	--	--

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BWI MARSHALL NEIGHBORS COMMITTEE

The BWI Marshall Neighbors Committee was established in December 1983 and serves as a liaison between the Airport and the surrounding communities to ensure continuing and timely discussion of mutual airport and community interests. The committee serves as a forum for exchanging information, ideas and suggestions.

Such interests include, but are not limited to:

- (1) ground access (highways, light rail, etc.)
- (2) long-range transportation planning issues
- (3) operational changes (construction, maintenance and air traffic control)
- (4) noise abatement and other environmental issues
- (5) parking and ground transportation
- (6) land use planning.

The Neighbors Committee consists of the following groups:

- Columbia Council
- Greater Elkridge Community Association
- Elmhurst Improvement Association
- Glen Burnie Improvement Association
- Glen Burnie Park Civic Association
- Ferndale Area Community Council
- Greater Pasadena Council
- Harmans Civic Association
- Linthicum/Shipleigh Improvement Association
- Severn Improvement Association
- Timber Ridge Improvement Association

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AIRPORT NOISE ZONE

The Maryland Environmental Noise Act of 1974 provides for the protection of citizens from the impact of transportation related noise. The aviation portion of the Act requires the MAA to create a certified Airport Noise Zone (ANZ) to control incompatible land development around BWI Marshall and a Noise Abatement Plan (NAP) to minimize the impact of aircraft noise on people living near the Airport. An ANZ and NAP were first established for BWI Marshall in 1976. Both were updated in 1982, 1988, 1993, and 1998. An updated ANZ was certified on November 6, 2007.

The ANZ is determined by a composite of three noise contours: a base year contour, a five-year forecast, and a ten-year forecast. The largest of the three contours in any area around the Airport determines the outline of the ANZ, thereby offering protection within the largest of the existing or future noise contours.

The contours depict the Day-Night Average Sound Level (DNL) around BWI Marshall. Both the State of Maryland and the FAA require the use of the DNL metric by all airports conducting environmental studies. The FAA also requires the use of its standard computer model for developing noise contours, known as the Integrated Noise Model (INM).

The 2007 ANZ is depicted on the following page.

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